

توصيف مقرر دراسي

Course description

1- Basic information:		١ - بيانات المقرر :
الفرقة/المستوى: ٤	اسم المقرر: ترشيد الطاقة - اختياري ٣	الرمز الكودي: هق١٤٣١خ
عملى: ٢	عدد الوحدات الدراسية: نظري: ٢	التخصص: قوى ميكانيكية
2- Course Aim:		٢ - هدف المقرر :
<p>This course aims to introduce the fundamentals of energy conservation. Individuals and organizations, that are direct consumers of energy, may want to conserve energy in order to reduce energy costs and promote environmental values. Industrial and commercial users may want to increase efficiency and maximize profit.</p> <p>This course aims to improve understanding of The need to increase the available supply of energy (for example, through the creation of new power plants, or by the importation of more energy) is lessened if societal demand for energy can be reduced, or if growth in demand can be slowed. This makes energy conservation an important part of the debate over climate change and the replacement of non-renewable resources with renewable energy.</p> <p>The course also aims to advance students that feasibility study is of important for the application method of energy conservation.</p>		
3- Intended learning outcomes (ILO's):		٣ - المستهدف من تدريس المقرر :
a- Knowledge and understanding skills:		أ - المعلومات والمفاهيم :
<p>By the end of this course the students will be able to have the knowledge of:</p> <p>K-1. Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.</p> <p>K-2. Current engineering technologies as related to energy.</p> <p>K-3. Power generation and energy consumption systems.</p> <p>K-4. The constraints which energy consumption have to judge to reach at an optimum solution.</p> <p>K-5. Basic theories and principles of some other engineering disciplines providing support to this course.</p>		
b- Intellectual skills:		ب - المهارات الذهنية :
<p>By the end of this course the students will be able to:</p> <p>I-1. Select appropriate solutions for energy savings based on analytical thinking.</p> <p>I-2. Differentiate in a creative and innovative way in problem solving and design.</p> <p>I-3. Exchange and assess different ideas and knowledge from a range of sources.</p> <p>I-4. Investigate the failure of achieving saving.</p> <p>I-5. Solve energy problems on the basis of limited information.</p> <p>I-6. Analyze energy saving, considering balanced costs, benefits, safety, quality, reliability, and environmental impact.</p> <p>I-7. Evaluate economic management in design.</p> <p>I-8. Evaluate energy savings and system improvements.</p>		

c- Practical and professional skills:	ج- المهارات المهنية الخاصة بالمقرر :
By the end of this course the students will be able to: P-1. Apply the engineering knowledge to achieve energy savings. P-2. Use techniques, measuring instruments to collect, analyze and interpret results. P-3. Apply ems systems. P-4. Demonstrate project management skills. P-5. Carry out knowledge with industry. P-6. Work in mechanical power operations.	
d- General and transferable skills:	د - المهارات العامة :
By the end of this course the students will be able to: G-1. Communicate effectively. G-2. Manage tasks and resources efficiently. G-3. Search for information and adopt life-long self learning. G-4. Refer to relevant literatures	
4- Course content:	٤- محتوى المقرر :
5- Teaching and learning strategies:	٥- أساليب التعليم والتعلم :
1. Lectures 2. Tutorials and Seminars 3. Independent learning Tasks 4. Assignments 5. Reports	
6- Teaching and learning strategies for special (low and high) skills student:	٦- أساليب التعليم والتعلم للطلاب ذوي القدرات المحدودة :
Office hours	
7- Students Assessment:	٧- تقويم الطلاب :
a- Used tools:	أ- الأساليب المستخدمة :
1- Report (written – internet facilities – library) 2- Quiz 3- Midterm (written exam) 4- Report (written – internet facilities – library) 5- Final Exam (written)	
b- Time:	ب- التوقيت :
1- Report – week 3 2- Quiz – week 5	

3- Midterm – week 8 4- Report – week 11 5- Final Exam – end of term	
c- Grade distribution:	ج- توزيع الدرجات :
1- Report (3 marks) 2- Quiz (4 marks) 3- Midterm (10 marks) 4- Report (3 marks) 5- Final Exam (70 marks) Attendance (10)	
8- Books and references list:	٨- قائمة الكتب الدراسية والمراجع :
a- Notes:	أ- مذكرات :
Energy Conservation	
b- Compulsory books:	ب- كتب ملزمة :
c- Suggested books:	ج- كتب مقترحة :
ENERGY CONSERVATION GUIDEBOOK Stephen W. Fardo, Dale R. Patrick and Steven R. Patrick The Fairmount Press ENERGY MANAGEMENT HANDBOOK, Fifth Edition Wayne C. Turner The Fairmount Press	
d- Related periodicals ...ect.:	د- دوريات علمية أو نشرات ... إلخ:
Journal of the Institute of Energy	

رئيس مجلس القسم العلمى (Head of Dept.)

استاذ المادة (Lecturer)
Ass.prof. Adel M.M. Hussien